



Canada: \$9.7 Billion Horizon Oil Sands Project

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Summary

Canadian Natural Resources Ltd. (CNRL) is developing the Horizon Oil Sands project, with a start up cost of \$9.7 billion. It is anticipated that at full production, the Horizon project will supply 577,000 barrels per day (bpd) of synthetic crude oil, accounting for 8% of Canada's daily production.

CNRL is one of the largest independent crude oil and natural gas exploration, development and production companies in the world. It has a strong presence in Western Canada with headquarters in Calgary and offices in British Columbia, Alberta, and Saskatchewan.

The Horizon Project is located approximately 44 miles north of Fort McMurray, in the province of Alberta. CNRL leased 115,000 acres of land from the province of Alberta, with a capacity of producing 16 billion barrels of oil. Construction, development and production will take place in five phases which began in 2004 and is projected to reach full production in 2017. The project and production life is estimated to be greater than 40 years and will generate \$24 billion direct government revenue. This report will review the five phases and potential opportunities for US companies in the Horizon Oil Sands project.

Canadian Natural Resource Ltd. (CNRL)

CNRL is one of the largest independent crude oil and natural gas exploration, development and production companies in the world. It has a strong presence in Western Canada with headquarters in Calgary and offices in British Columbia, Alberta, and Saskatchewan. Worldwide locations include Gabon and Cote d'Ivoire in Africa, and Aberdeen, Scotland. The Horizon Oil Sands Project is currently CNRL's largest project, and is ranked 279th on the Forbes Global 2000 list.

CNRL is among the leading energy producers of natural gas, light oil, heavy oil, in-situ oil sands production, oil sands mining and associated upgrading facilities.

Horizon Oil Sands Project Timeline

Construction on the Horizon project started in 2004 and the first of five phases was completed February 28, 2009. Phase 1 produced 110,000 bpd, falling short of the production capacity of 135,000 bpd. Phases 2 and 3 have been approved but were

stalled as a result of Phase 1's extended deadline and the separation of work into more manageable pieces. Phases 4 and 5 are expected to be completed by 2015-2017.

Phases

The Horizon project focuses on five phases of development. Phase 1 production of the site was implemented following an environmental assessment, receiving permits and designing the project facilities. Following the initial process the plant production and froth removal begin on site. Phase 1 was the most critical step for the Horizon project due to the significant amount of capital invested toward infrastructure in anticipation of future developments. Upgrading the infrastructure of the facility, equipment and camp expansion were included in these future developments. During the main construction period Horizon employed approximately 25,000 people with another 10,000 employed during peak construction.

With progression of production there will be an increase in the amount of upgrades completed through phases 1 thru 3 on facilities and equipment. One of CNRL's major goals was to avoid a "mega projects" approach for development and production of the project. CNRL's approach was to break down the overall project and expansion into smaller manageable pieces, allowing for an enhanced project and cost control. These manageable pieces were further broken down into four tranches. Tranche 1 was in Phase 1 with Phases 2 and 3 separated into Tranches 2, 3 and 4. Each tranche will add processing facilities, incremental production, refurbishment of existing and purchasing of new mining equipment.

The majority of the mining equipment is purchased through the engineering firms awarded engineering and procurement (EP) contracts, as well directly through Horizon procurement teams.

The Horizon Project utilizes open pit mining to extract the bitumen from the oil sands. It consists of mobile equipment and bitumen extraction facilities to mine and separate the bitumen from the oil sands. The conversion from the raw bitumen to the sweet crude oil takes place in three steps; mining, bitumen processing, and upgrading.

CNRL Horizon	Status	Date of completion	Bitumen (bpd) Capacity
Phase 1	Operating	Completed in February 2009	Current production of 110,000 bpd, capacity of 135,000 bpd
Phase 2&3	Approved	Approved for completion in 2011	135,000 bpd
Phase 4	Announced	Announced for 2015-2017 completion	145,000 bpd
Phase 5	Announced	Announced for 2015-2017 completion	162,000 bpd
			577,000 bpd

CNRL, Horizon Oil Sands Project Contacts:

<http://www.cnrl.com/about-cng/management.html>

Contractors

Contractors include:

E Construction, TBG Contracting, AGAT Labs, ATCO, PTI Group, TIW Steel Platework, Black & Veatch, AMEC, Horton CBI, Horton, Thurber Engineering, Thompson Bros. Construction, AC&T Limited Partnership, Noramac Ventures, Stantec

IRISNDT, Krupp, Noramac, Kiewit Industrial Canada, Technip US Corporation, Bird Construction, Tridon Communications, Steeplejack Services, Bouchier Contracting, Cross Contracting, Initial Security, MRRT, Telus
Canadian Natural Resources, HCS Focus, International Cooling Towers, Lockerbie & Hole, Chemco Electric Constructors, PTI Group, Baker Engineering & Risk Consultants, Moody International, Golder Associates, FMA Heritage Resources Consultants
Casman Construction, Hazco Environmental Services, Stantec Consulting, ATCO Structures, Zachry Engineering

Major contractors on Horizon Project

Company	Contract	Contract Value
Fluor	-execute the engineering design specifications on the projects utilities and offsite facilities	Not disclosed
SNC-LAVALIN	-joint venture contract with Snamprogetti Canada Inc, provide engineering, procurement and construction management services	-joint venture contract plus the field construction equal to \$550 million
Black & Veatch	-supplying valves for plants on site	-\$1.4 million
Technip	-awarded two contracts for upgrading facilities and a hydrogen unit -first contract was for a diluents recovery unit (DRU) and a coking unit (DCU) -second contract covers a hydrogen unit, which will be the world's second largest train hydrogen plant	-\$870 million first contract -\$200 million second contract -\$1 billion in total
Black Diamond	-Black Diamond received a contract for a major camp expansion, to create complexes for rental basis for workers on site.	Not disclosed
Emerson	-digitally automate the first phase of the Horizon project -run the automation of facilities that recover and upgrade bitumen	Not disclosed

Environment

Prior to being implemented any major oil sands project must undergo a major environmental assessment under the Canadian Environmental Assessment Act (CEAA). Results from the assessments have to reviewed by several environmental government agencies and the Alberta Energy and Utilities Board (EUB). For the majority of oil sands projects, the major environmental concerns are: water conservation; greenhouse gas (GHG) emissions; land disturbance, and waste management. Environmental assessments are contracted out to several regional companies specializing in specific aspects ranging from; water, air, reclamation and cumulative affects modeling.

Conclusion

With the growing oil industry, Alberta offers U.S. companies many business opportunities. U.S. companies who are interested in doing business on the Horizon Project are encouraged to contact CNRL for further information.

Trade Events

Global Petroleum Show

<http://www.buyusa.gov/canada/en/gps2010.html>, June 8-10, 2010, Calgary, Alberta, Canada

Oil Sands Show and Conference

<http://www.oilsandstradeshows.com/PDM/Events/2009-09-OST.aspx?evid=5&pgid=10>
September, 2010, Edmonton, Alberta

GO-EXPO show

<http://www.petroleumshow.com/PDM/Events/Event.aspx?evid=6&pgid=71>
June 9-11, 2011, Calgary, Alberta

For More Information

The U.S. Commercial Service in Calgary, Alberta, Canada can be contacted via email at: Crystal.roberts@mail.doc.gov; Phone: 1 (403) 265-2116; Fax: 1 (403) 266-4743; or visit our website: www.buyusa.gov/canada

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